

Determinants of Credit Default in the Credit Union Case Study: Credit Union Bererod Gratia, Jakarta

Antonius Sumarwan
Credit Union Bererod Gratia
marwansj@gmail.com

Novita Sulistiowati
Gunadarma University
novitahk@staff.gunadarma.ac.id

S.S.P. Pandjaitan
Lampung University

Abstract

The high numbers of credit default showing the distribution of credits that are not well targeted and efficient. Not on target due to credits granted to members who do not have the willingness and ability to repay the credits. Not on target due to credits granted to members who do not use it as a tool to enhance its economic potential and capabilities. This means the credit default problems will hinder the role of the Credit Union (CU) to take part in developing micro-scale enterprises. Internally, this will also disrupt the stability of the CU because it reduces the assets of CU which is a picture of the level of confidence to the CU members. This study examined the determinants of credit default of CU. The purpose of this test is to know the specific things that become the cause of the credit default.

This study examined the determinants of credit default that occurred in the CU credit distribution. Case study research conducted at CU Bererod Gratia (CUBG), Jakarta. The primary data required in this study are indicators of credit analysis. Primary data was obtained by distributing questionnaires to 200 people CUBG members. The analysis was performed by using logistic regression since the logistic regression can test whether the probability of credit collectability quality (smooth or problematic) can be predicted by independent variables.

The test results indicate that CUBG not able to identify customers based on their probability of credit payment. The indicators used by the credit analysis CUBG not able to produce signals that can identify customers based on their probability of credit payment. Furthermore, the test results showed that customers work, intended use of credit, collateral type of customer and customer understanding of CUBG business concepts have a significant impact on the probability of a credit default. This means that by taking into account the type of work customers, use of credit by the customer, the kind of pledged goods to customers and understanding customers' CUBG business concept, will enhance the ability CUBG to identify customers based on their credit payments.

Keywords :

1 Introduction

Nowadays banking is become more interested in micro and small market. Giving credit to small entrepreneurs, in addition to contributing to the eradication of poverty, improving public welfare under and economic equality, it also provides great benefits for the bank. Bank BRI loyal and focused work on the micro market in 2010 remained strong as the top income-winning bank, namely Rp9, 08 trillion.

In 1970, CU has already entered micro and small market, far before Bank Rakyat Indonesia (BRI) did. In the CU, the bottom forming bonds of solidarity, raise funds in the form of deposits from members and distribute those funds in credits to members. In this way each member of the CU mutual help pursue economic independence and pros-

perity.

Due to the small scale and scattered and a bad image of cooperatives, long enough not to sound the CU movement. But after the monetary crisis 1997-1998 and fall of the New Order regime, CU movement began to show its existence. CU In the period 2000-2009 shows an impressive growth. The growth of CU member is 20% per year, while growth in deposits, credits and assets respectively 55%, 47% and 46%. With such growth, in December 2009 members of the CU in Indonesia reached 1.33 million people spread over 888 CU, while deposits are collected for Rp6, 26 trillion, credits Rp5, 76 Rp7 trillion and assets, 39 trillion. This data shows how much potential CU as a movement of empowerment of the small people.

Amid the excitement will be growing rapidly CU,

there is one major problem which if not addressed soon will threaten the sustainability of the CU. This issue is non performing credits (non-performing credits) is relatively high. For example, data 4 CU in Central Kalimantan in July 2010 showed that the average outstanding credits with problems through the numbers more than 16% of total credits outstanding. In nominal terms, total outstanding credits reached more problematic than Rp57milyar. This figure represents 12.56% of the total assets of the CU area of Central Kalimantan, which is almost close to Rp457milyar. The overall figure is quite fantastic because it illustrates the power of self-supporting all members of the CU which is actually marginal in the hinterland of Central Kalimantan. But from another perspective, the overall figures indicate problems that need immediate solution. The high numbers of credit default are showing that the distributions of credits are not well targeted and efficient. Not on target due to credits granted to members who do not have the willingness and ability to repay the credits. Not on target due to credits granted to members who do not use it as a tool to enhance its economic potential and capabilities. This means the credit outstanding problems will hinder the role of the CU to take part in developing micro-scale enterprises. Internally, this will also disrupt the stability of the CU because it reduces the assets of CU which is a picture of the level of confidence to the credit union members.

As one step to answer the question above, this research examines the determinants of the troubled credit union credits outstanding. The purpose of this test is to know the specific things that become the cause of the outstanding credit becomes problematic CU. Determinant cause of this problem credits can be input to the CU to be more observant and focused in processing credit application and credit analysis so lax lending can be prevented.

2 Theoretical Background

[Jafee and Stiglitz, 1990]explains that the credit market, credit funds received from the bank customers currently exchanged for the promise that customers will pay at the time will come. Therefore the credit markets can be said as the market promise (promise market). But customers do not always keep their promises, otherwise the customer is often broken a promise. The difference between the promise of customer and credit the payment is actually the result of uncertainty about the ability or willingness of customers to repay credits. This creates the risk of credit failure

Because of the risk of credit default, before the credit disbursed, lenders need to do a credit analysis. [Sutojo, 1997]and [Rivai, 2007] describe several major factors in credit analysis, the factor of character, capital, capacity, condition of economy and collateral.

1. Character

is a state of nature / the nature of the customer, whether in personal life and in business environments. Usefulness of the assessment of this character is to determine the extent of customer willingness to meet its obligations in accordance with the agreements that have been specified.

2. Capital is the number of fund / equity capital owned by the prospective customer.

The greater the own capital in companies, of course the higher the seriousness of prospective customers in running their businesses and banks will feel more confident in providing credit. In practice the ability of capital is manifested in the form of an obligation to provide funds (self-financing), which should amount greater than the requested credit to the bank.

3. Capacity is the ability of the customers in running their business in order to obtain the expected profit.

The usefulness of this assessment is how to know / measure the extent to which the prospective customer is able to restore or pay off his debts in a timely manner of businesses acquired.

4. Condition of Economy

is the political circumstances, social, economic, cultural circumstances that affect the economy at a time that likely affect the smoothness of the debtor company.

5. Collateral, are goods which the customer handed over as collateral against credits that it receives.

Collateral shall be assessed by the bank to determine the extent to which the risk of customers' financial obligations to the bank. Assessments of this warranty include the type, location, evidence of ownership, and legal status.

According [Sutojo, 1997], the main purpose of credit analysis is to assess how much ability and willingness of prospective customers to repay credits they borrow and pay interest in accordance with the contents of the credit agreement. Next [Rivai, 2007] describes several approaches that could be used in credit analysis as follows.

1. The approach of character

a credit for certain people whose features were no doubt, purely based on trust, reputation and character of prospective customers. Usefulness of the assessment of this character was to assess the willingness of customers to fulfill their obligations in accordance with the agreements that have been specified.

2. Approach capacity and worthiness

credit provision based on the ability of customers to settle on the obvious source of repayment and controlled by banks, such repayment by salary deduction customers. These approaches also assess carefully the feasibility of a project to be financed by the proposed credit customers.

3. The approach of collateral

the credit for customers that guarantee is very strong in terms of ownership and liquidity, both in terms of economic value as well as juridical value so that the credits into safer and better quality of credit collectability.

4. Macro-economic approach

the credit is based on political circumstances, social, economic, cultural circumstances that affect the economy so that it can affect the smooth running of business customers.

3 Research Method

3.1 Object Design and Research

This study examined the determinants of problem credits that occurred in lending by the credit union. Case study research conducted at CU Bererod Gratia (CUBG), Jakarta. The primary data required in this study are indicators of credit analysis. Primary data was obtained by distributing questionnaires to 200 people CUBG members. As an object of research, CUBG is an interesting case study given that most members CUBG are residents in the city of Jakarta, Bekasi and Tangerang. Meanwhile, most of the other credit union serving members in rural areas. CUBG Statistical data shows that the nonperforming credit problem occurs both in rural and urban credit union. Formed in 2006, CUBG in December 2010 consisted of 6011 people with total deposits Rp53, 83 billion, credits Rp39, Rp56 32 billion and assets, 88 billion. Throughout 2010, ratio credit default per outstanding credit are 11.7% or equal to 9% of assets. This figure is not much different from the rate ratio in 2009 of 12.4% and well above the ideal threshold of 5% Pearls analysis.

3.2 Econometric Models and Data Analysis Techniques

So econometric model of this study are as follows.

$$Y_{DLancor} = \beta_0 + \beta_1 X_{Pr opinsi} + \beta_2 X_{UsiaNasabah} + \beta_3 X_{JenisKela min} + \beta_4 X_{Pr opinsiLahir} + \beta_5 X_{StatusPernikahan} + \beta_6 X_{JumlahTanggungan} + \beta_7 X_{Peker jaan} + \beta_8 X_{StatusAplikasi} + \beta_9 X_{TajuanKredit} + \beta_{10} X_{JenisAgunan} + \beta_{11} X_{KepemilikanAgunan} + \beta_{12} X_{PlafondKredit / H argaPasaranAgunan} + \beta_{13} X_{PlafondKredit / JmlKreditDijjukan} + \beta_{14} X_{Ter min Disetujui / Ter min Dijjukan} + \beta_{15} X_{Bunga} + \beta_{16} X_{TotalBunga / PlafondKredit} + \beta_{17} X_{Pr ovisi ^{Ad min} / PlafondKredit} + \beta_{18} X_{Angsuran / Penghasilan} + \beta_{19} X_{Lama Pr oses} + \beta_{20} X_{LamaKerja} + \beta_{21} X_{KelengkapanBerkas}$$

To perform an analysis of the econometric model above, we need analysis tools that can test whether the probability of occurrence of the dependent variable can be predicted by the independent variables. In other words, this research needs an analysis tool that can test whether the probability of credit collectability quality (smooth or problematic) can be predicted by independent variables. In this case, the dependent variable is categorical variables or binary variables with value 1 or 0 (success or failure, or current credit problems.)

[et al, 2006]states that there are two analytical tools that can perform these tests, namely discriminant analysis (discriminant analysis) and logistic regression (logistic regression). But in this case, discriminant analysis cannot be selected as an appropriate analytical tool for discriminant analysis requires the fulfillment of the assumption of multivariate normal distribution. In the above model assumptions can not be fulfilled because the independent variables are a mixture of continuous variables (metrics) and categorical variables (non-metric). Thus, the analysis performed using logistic regression because logistic regression does not require the assumption of multivariate normal distribution are met. The same analysis tools are used in[Scott, 2006], [Saito, 2006]and [Bicakova, 2007] to conduct research on asymmetric information.

Logistic regression equation for this research is.

$$\ln odds_{Ditanggapi} = \beta_0 + \beta_1 X_{Usia} + \beta_2 X_{Diperumpan} + \beta_3 X_{Dbeda Pr op} + \beta_4 X_{DNilah} + \beta_5 X_{JumlahTanggungan} + \beta_6 X_{DKaryawan} + \beta_7 X_{DPendapa tan 2} + \beta_8 X_{DPendapa tan 3} + \beta_9 X_{DPendapa tan 4} + \beta_{10} X_{DUlung} + \beta_{11} X_{PlafondKredit / JmlKreditDijjukan} + \beta_{12} X_{Ter min} + \beta_{13} X_{Lama Pr oses} + \beta_{14} X_{Dproduktif} + \beta_{15} X_{Dkamuatif} + \beta_{16} X_{DSimpunanLebihDariPinjaman} + \beta_{17} X_{DPRKB} + \beta_{18} X_{DKertifika} + \beta_{19} X_{DNamaOrangLain} + \beta_{20} X_{PlafondKredit / H argaPasaranAgunan} + \beta_{21} X_{KelengkapanBerkas} + \beta_{22} X_{DPinjaman-Simpunan} + \beta_{23} X_{DPinjaman-AssestBertambah} + \beta_{24} X_{DSubKritPenditikan} + \beta_{25} X_{PenditikanDatar}$$

The amount of change in odds for each variable can be calculated using the formula. Percentage change in odds = (Exp (B) -1) X100% (Hair et al, 2006).

4 Result and discussion

To measure how much variability in the quality of the collectability of customer credit as the dependent variable can be explained by the indicators of credit analysis as independent variables, logistic regression provides a measurement that can be equivalent to R2 in multiple regression, the Cox & Snell R Square and Nagelkerke R Square. Table 1 shows the number of Cox & Snell R Square and Nagelkerke R Square logistic regression calculation. Value of Cox & Snell R Square = 0.282 and the value of Nagelkerke R Square = .391. From the variation of R2 figures could mean that less than 40% variation bound variable that can be explained by the logistic regression model with 21 independent variables.

The results stated that indicators of credit analysis that has been used CUBG only able to explain less than 40% of current customer credit quality or collectability problematic. More than 60% variation of the quality of customer credit collectability it can not be explained by the indicators of credit

Table 1: Value of Cox & Snell R Square and Nagelkerke R Square Model Research

ep	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
	155.973(a)	.282	.391

analysis in the model. This indicates that CUBG not able to identify customers based on their probability of credit payment. The indicators used the credit analysis CUBG not able to produce signals that can identify customers based on their probability of credit payment.

In detail, the results of data processing can be seen in table 2 . The results of data processing produce equation logistic regression models as follows.

$$\ln \text{odds}_{\text{Ditangg}} = 1,243 - 0,007 X_{\text{Usia}} - 0,486 X_{\text{DPernikahan}} - 0,180 X_{\text{DRevisi Pr op}} - 0,088 X_{\text{DNilah}} - 0,211 X_{\text{Jumlah Anak}} - 0,911 X_{\text{DKaryawan}} - 0,438 X_{\text{DPendapatan 2}} - 0,119 X_{\text{DPendapatan 3}} - 0,330 X_{\text{DPendapatan 4}} - 0,006 X_{\text{DDulang}} + 1,186 X_{\text{PisfondKredit / JmlKreditDijukan}} + 0,016 X_{\text{Ter min}} + 0,016 X_{\text{Lama Pr ones}} + 2,419 X_{\text{Dproduktif}} + 2,241 X_{\text{DKonsumtif}} + 0,030 X_{\text{DPinjaman: EbtDprPinjaman}} - 1,314 X_{\text{DBPKB}} + 1,310 X_{\text{DSerifBar}} + 0,365 X_{\text{DNamaCramglatin}} + 0,003 X_{\text{PisfondKredit / H ang DPasArAgunan}} - 2,039 X_{\text{Kekelengberkas}} + 0,060 X_{\text{DPinjaman: Smpangan}} - 1,296 X_{\text{DPinjaman: AssetBertambah}} - 2,006 X_{\text{DsdhPendapatan}} - 0,131 X_{\text{PendidikanDasa: Cakap}}$$

Significance set at alpha 0.05. In table 2 we can see that there are six variables significant at an alpha of 0.05, which is variable DKaryawan, DProduktif variables, variables DKonsumtif, DBPKB variables, variables and variable DPinjaman = AssetBertambah DsdhIkutPendidikan.

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Dproduktif Variables significant at an alpha significance of 0.05 with probability 0.019. Original coefficient of this variable is 2.419 with 11.231 logarithmic transformations. Thus, customers who use credit for productive activities has odds of nonperforming credits 1023.1% ((11.231-1) X100%) higher compared with customers who use credit to pay the principal savings as a member of the CU (credit capital). While on the other variables related, Dkonsumtif variable significant at the alpha significance of 0.05 with probability 0.029. Original coefficient of this variable is 2.241 with 9.404 logarithmic transformations. Thus, customers who use credit for consumption has odds of nonperforming credits 840.4% ((9.404-1) X100%) higher compared with customers who use credit to pay the principal savings as a member of the CU (credit capital). Credit capital is one type of credit provided by the CU for its members. This credit is intended for customers who are new members of the CU but has not been able to pay the principal savings credit union members. Thus, this credit is not taken in cash by customers, but customers used to pay principal savings directly. Thus, this credit can not be used personally by the member but returned to the CU. This does not allow the abuse of credit (Moral Hazard), which can interfere with the return credit.

DBPKB Variables significant at an alpha signifi-

cance of 0.05 with probability 0.044. Original coefficient of this variable is -1.314 to 0.269 logarithmic transformations. Thus, customers who use the vehicles as collateral for credits has odds of nonperforming credits 73.1% ((0.269-1) X100%) was lower compared with customers who do not provide collateral for credit. Consistent with Stiglitz and Weiss (1981, 1992); Jafee and Stiglitz (1990) that the collateral can lower the level of credit risk failure but cannot eliminate them. Collateral role is to ensure partial or total credit value in the event of failure to credit payments. Yet despite the overall value of collateral to guarantee credits, mortgages cannot abolish the mortgage interest rates because there is still uncertainty factor inherent in the value of collateral and collateral liquidation costs.

Variable DPinjaman AssetBertambah significant at alpha = 0.05 with significance probability 0.039. Original coefficient of this variable is -1.296 to 0.274 logarithmic transformations. Thus, clients who understand the concept of adding assets through credits has odds of nonperforming credits 72.6% ((0.274-1) X100%) was lower compared with customers who do not understand the concept of adding assets through credits. As a member of the CU, the customer has an obligation to save. If a customer borrows money from the CU does not mean that customers take the savings. Thus, to borrow money from the personal assets of the CU is adding customers. Customers who understand this concept will pay off the credit properly. In contrast, customers who do not understand this concept will assume that the credit means taking savings in CU. This did not result in liability to repay the credit.

DsdhIkutPendidikan Variables significant at an alpha significance of 0.05 with probability 0.006. Original coefficient of this variable is -2.006 to 0.134 logarithmic transformations. Thus, customers who already follow the basic education CU has odds of nonperforming credits 86.6% ((0.134-1) X100%) was lower compared with customers who do not understand the concept of adding assets through credits. Primary education inculcates important concepts about the CU to its members, including the customer duty members of the CU to pay off their credit.

Rkelengberkas	-2.039	1.061	3.696	1	0.055	0.13
Dpinjsamasimp	0.06	0.481	0.015	1	0.901	1.061
Dpinjasetamb	-1.296	0.627	4.269	1	0.039	0.274
Dsdhpend	-2.006	0.73	7.561	1	0.006	0.134
Dpenddasckp	-0.131	0.529	0.062	1	0.804	0.877
Constant	1.243	2.494	0.248	1	0.618	3.465

5 Conclusion

This study examined the determinants of problem credits that occurred in lending by the credit union. The test results indicate that CUBG not able to identify customers based on their probability of credit

Table 2: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step	Usia	-0.007	0.02	0.142	1	0.706	0.993
1(a)	Dperempuan	-0.486	0.493	0.971	1	0.324	0.615
	Dbedaprop	-0.18	0.472	0.146	1	0.703	0.835
	Dnikah	-0.088	0.609	0.021	1	0.885	0.915
	Jmltang	-0.211	0.226	0.878	1	0.349	0.81
	Dkaryawan	-0.911	0.458	3.951	1	0.047	0.402
	dpendapatan2	-0.438	0.694	0.397	1	0.529	0.646
	dpendapatan3	-0.119	0.733	0.026	1	0.871	0.888
	dpendapatan4	-0.33	0.833	0.157	1	0.692	0.719
	Dulang	-0.006	0.475	0	1	0.989	0.994
	Rcairtdajukan	1.186	1.936	0.375	1	0.54	3.275
	Termin	0.016	0.014	1.268	1	0.26	1.016
	Proses	0.016	0.026	0.37	1	0.543	1.016
	Dproduktif	2.419	1.029	5.523	1	0.019	11.231
	Dkonsumtif	2.241	1.023	4.795	1	0.029	9.404
	Dsimplbhpinj	0.03	0.523	0.003	1	0.954	1.031
	Dbpkb	-1.314	0.653	4.05	1	0.044	0.269
	Dsertifikat	-1.31	0.738	3.148	1	0.076	0.27
	Dnamaorglain	0.365	0.737	0.245	1	0.62	1.44
	Rpinjthdagunat	0.003	0.094	0.001	1	0.977	1.003

payment. The indicators used by the credit analysis CUBG not able to produce signals that can identify customers based on their probability of credit payment. In this case, the ability CUBG in doing interpretations of the indicators of customer credit analysis to improve the ability CUBG in identifying customers based on their probability of credit payment. Furthermore, the test results showed that customers work, intended use of credit, collateral type of customer and customer understanding of business concepts CUBG have a significant impact on the probability of a credit default. This means that by taking into account the type of work customers, use of credit by the customer, the kind of pledged goods to customers and understanding customers' business concept CUBG, will enhance the ability CUBG to identify customers based on their credit payments.

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